

L 43099-66

ACC NR: AP6014122

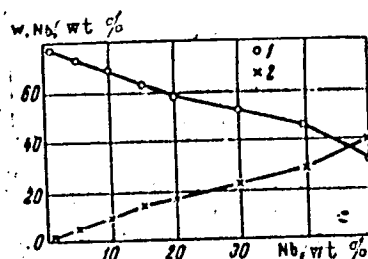


Fig. 1. Change in the tungsten (1) and niobium (2) content in the oxide scale at an oxidation temperature of 1200C as a function of the niobium content in the alloy.

Orig. art. has: 2 tables and 5 figures.

SUB CODE: 11/ SUBM DATE: 19Nov64/ ORIG REF: 008/ OTH REF: 003

Card 2/2 MLP

ACC NR: AT6034446

(A)

SOURCE CODE: UR/0000/66/000/000/0124/0127

AUTHOR: Prokoshkin, D. A.; Vasil'yeva, Ye. V.; Chudarev, L. F.

ORG: none

TITLE: Investigation of creep in niobium alloys by the torsion method

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 124-127

TOPIC TAGS: niobium base alloy, creep, titanium containing alloy, boron containing alloy, molybdenum containing alloy, torsion stress

ABSTRACT: The investigation was made on samples of niobium with 5, 8, and 10 weight percent molybdenum, alloyed with titanium (up to 10%), boron (up to 2%), and zirconium (up to 10%). A figure shows the dependence of the deformation on time for different temperatures, obtained by conventional and temperature cycle methods for a niobium alloy with 5% molybdenum and 0.5% boron. The closeness of the values of the creep rate at the same temperature, by the two methods, indicates that the temperature cycle method can be used even in the case of complex alloys. To obtain comparative values of the creep rate, the temperature interval of the experiments was varied somewhat as a function of the composition of the alloy. In particular, alloys containing 10%

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ACC NR: AT603446

titanium and 10% zirconium were tested at lower temperatures. A second figure shows a semilogarithmic plot of the dependence of the deformation on temperature for a large number of different alloys. The values of the effective activation energy for creep can be determined from the slope of the straight on the plot. On the basis of the experimental results the conclusion is drawn that it is not possible to establish a correlation between the activation energy for the creep and the activation energy for autodiffusion. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 006/ OTH REF: 005

Card 2/2

L 08120-62 EWT(m)/EWP(+)/ETI IJP(o) JD/HW/JG/WB/GD
ACC NR: AT6034467 (A) SOURCE CODE: UR/0000/66/000/000/0285/0290.

AUTHOR: Prokoshkin, D. A.; Vasil'yeva, Ye. V.; Lazarev, E. M. 39
B+1

ORG: none

TITLE: Investigation of oxidation of niobium alloyed with vanadium,
titanium or zirconium 27

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye
zharoprochnykh splavov (Properties and application of heat-resistant
alloys). Moscow, Izd-vo, Nauka, 1966, 285-290

TOPIC TAGS: niobium alloy, ~~niobium alloy~~ oxidation, vanadium containing
alloy, titanium containing alloy, zirconium containing alloy

ABSTRACT: Specimens of three series of niobium-base alloys, containing
1-15% vanadium and 1-10% titanium or 1-20% zirconium, arc melted in
an argon atmosphere, were subjected to oxidation tests in air at
900-1200C. It was found that the oxidation rate depends on the com-
position. The oxidation rate of the Nb-V-Ti alloys with 10% titanium
depends primarily on the vanadium content. It gradually decreases with
increasing vanadium content and at 1200C reaches a minimum of
6.3 mg/cm²·hr at 5% of vanadium; then it increases and at 10% vanadium
is 20.9 mg/cm²·hr, i.e., even higher than that of unalloyed niobium.

Cord 1/2

L 08420-67

ACC NR: AT6034467

The alloy containing 5% V and 10% Ti had the highest oxidation resistance. It was established that 5% vanadium reduces the oxidation rate by 2—3 times, and 10% of titanium reduces it by 3—6 times. Only zirconium, of the three contents tested, was found to increase the oxidation rate. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 005/ OTH REF: 006/
ATD PRESS: 5103

Cord 2/2 18

L 09074-67 T EWT(m)/EWP(t)/ETI IJP(c) JD/JG/BB/CD
ACC NR: AP6034466 SOURCE CODE: UR/0000/66/000/000/0280/0285

AUTHOR: Lazareva, I. Yu.; Prokoshkin, D. A.; Vasil'yeva, Ye. V.; Maslenkov, S. B.

ORG: none

TITLE: Investigation of the oxidation resistance of tungsten-niobium-titanium alloys

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh spлавov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 280-285

TOPIC TAGS: tungsten ~~niobium~~ alloy, ~~tungsten titanium~~ alloy, ~~tungsten niobium~~ alloy, titanium alloy, ~~alloy~~ oxidation resistant, alloy oxidation metal

ABSTRACT: The oxidation resistance of binary tungsten alloys with up to 50% niobium or titanium, and ternary tungsten-niobium-titanium alloys has been investigated. Niobium was found to be the most effective in increasing the oxidation resistance, especially at contents of up to 30%. Titanium at contents of up to 5% improves the oxidation resistance of binary alloys. At higher contents the titanium effect is negative, especially at temperatures above 1200C. Also in ternary alloys, the titanium effect is negative. Oxidation proceeds by a two-way diffusion of oxygen and metal with a preferred migration of niobium ions in the tungsten-niobium system and of titanium ions in the tungsten-titanium-niobium systems. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS: 5104
Card 1/1

L 07092-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AP6019006 SOURCE CODE: UR/0109/66/011/006/1150/1151

AUTHOR: Vasil'yeva, Ye. V.; Dyubua, B. Ch.; Yermolayev, L. A.;
Kultashev, O. K.

75
8

ORG: none

TITLE: Emission properties of Pt-La, Ir-La, Os-La alloys

SOURCE: Radiotekhnika i elektronika, v. 11, no. 6, 1966, 1150-1151

TOPIC TAGS: electron emission, emissivity, thermionic emission, secondary
electron emission, *LANTHANUM, ALLOY, PLATINUM CONTAINING ALLOY,*
IRIDIUM CONTAINING ALLOY, OSMIUM CONTAINING ALLOY

ABSTRACT: The results are reported of an experimental investigation of
thermionic and secondary-electron emission of Os-La (with a Laves phase Os₂La),
of Pt-La (with a Pt₅La phase), and of Ir-La (with an Ir₅La phase) alloys; see
A. E. Dwight, Trans. Am. Soc. Metals, 1961, 53, part 1, 479; T. H. Geballe

UDC: 669.231 / 233.5.018.5:621.385.7

Card 1/2

L 07692-57

ACC NR: AP6019006

et al., Phys. Rev., 1965, 137, A119. The results are tabulated below:

Alloy	Work function 1600K ev	Temp. coeff. ev/1K	Max. coeff. sec.-el. emiss.
Pt-La 0,5%	4,01	$2 \cdot 10^{-4}$	1,73
Ir-La 0,5%	2,69	$4 \cdot 10^{-4}$	2,47
Os-La 0,5%	2,71	$6 \cdot 10^{-4}$	2,20

Orig. art. has: 1 table.

SUB CODE: 20, 09 / SUBM DATE: 17Nov65 / ORIG REF: 002 / OTH REF: 002

Card 2/2 LC

ACC NR: AP7002431

(A)

SOURCE CODE: UR/0219/66/000/012/0021/0024

AUTHOR: Vasil'yeva, Ye. V.; Prokoshkin, D. A.; Belova, L. M.

ORG: Institute of Metallurgy AN SSSR (Institut metallurgii AN SSSR)

TITLE: The structure and properties of niobium-tantalum alloys containing tungsten and molybdenum

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 21-24 and inserts facing pages 48 and 49

TOPIC TAGS: niobium, tantalum alloy, molybdenum containing alloy, tungsten containing alloy, alloy structure, ~~alloy~~ property metal

ABSTRACT:

The effect of tantalum (0.5, 1, 5, 10 or 15%), molybdenum and tungsten (5% of each) on the microstructure and room and high-temperature hardness of niobium-base alloys has been investigated. The alloys were melted from 99.4%-pure niobium, 99.75%-pure tantalum, 99.65%-pure molybdenum and 99.95%-pure tungsten in a nonconsumable (tungsten) electrode, vacuum-arc furnace in an argon atmosphere. Alloy ingots were annealed at 1700C for 50 hr. It was found that the microstructure of cast Nb-Ta alloy had the typical structure of a single-phase solid solution. With increasing tantalum content, the substructure became more distinct. As-cast Nb + 5% Ta + 5% Mo and Nb + 10% Ta + 5% Mo alloys also had a single-phase structure with

UDC: 620.17:669.293'294'27'28

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ACC NR: AP7002431

elongated grains and traces of dendritic segregation. A noticeable segregation of impurities was observed in Nb + 5%Ta + 5%W and Nb + 10% Ta + 5% W alloys. The respective hardness at 20 and 1000C of Nb + 10% Ta alloy was 180 and 105 HV. Additional alloying with 5% molybdenum or 5% tungsten increased the hardness to 198 and 127 HV or to 192 and 120 HV, compared to 150 and 90 HV for unalloyed niobium. The creep rate (calculated from the results of hot hardness tests) of alloys containing molybdenum and tantalum was the

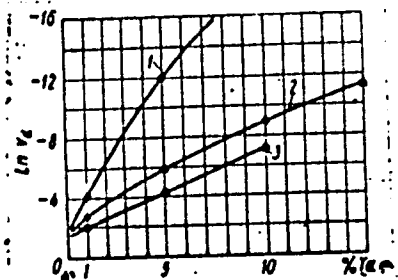


Fig. 1. Composition dependence of creep rate (V_d) of Nb-Ta, Nb-Ta-Mo and Nb-Ta-W alloys at 1000C

lowest and that of alloys containing tantalum and tungsten the highest (see Fig. 1). . Orig. art. has: 4 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 003/ ATD PRESS: 5113

Card 2/2

ACC NR: AP7002434

SOURCE CODE: UR/0219/66/000/012/0031/0033

AUTHOR: Lazarev, E. M.; Vasil'yeva, Ye. V.

ORC. Institute of Metallurgy, AN SSSR (Institut metallurgii AN SSSR)

TITLE: Structure and mechanical properties of the alloys of the Nb-V-Ti system

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 31-33 and insert facing page 48

TOPIC TAGS: niobium base alloy, vanadium containing alloy, titanium containing alloy, hardness, tensile strength, ductility, alloy system

ABSTRACT:

Niobium-base alloys containing 1-15% vanadium and 1-10% titanium were melted from 99.78%-pure niobium, iodide vanadium, and iodide titanium. The as-cast alloys had a dendritic microstructure which became more pronounced with increasing vanadium content. Alloys annealed in vacuum at 1400C for 25 hr had equiaxial grains. Increased titanium and vanadium content increased the hardness. The effect of vanadium is more pronounced. An increase in

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UDC: 620.17:669.293'292'295

ACC NR: AP7002434

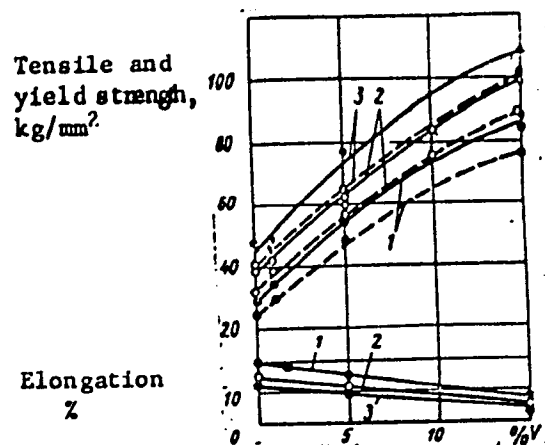


Fig. 1. Composition dependance of mechanical properties of Nb-V-Ti alloys containing 1 (1), 5 (2) and 10% (3) Ti; Tensile strength-solid lines; yield strength-broken lines

vanadium content from 0 to 15% increased the tensile strength from 47.5 to 107.5 kg/mm² in alloys containing 10% titanium and from 34.3 to 83.6 kg/mm² in alloys containing 1% titanium (see Fig. 1). The yield strength also increased with increased vanadium and titanium content. The ductility generally dropped with increasing titanium or vanadium content, titanium being more effective than vanadium. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 5113
Card 2/2

L 2661-66 ENT(m)/ENP(w)/EPF(c)/T/ENP(t)/ENP(b)/ENA(c) IJP(c) JD/JG/WB/GS

ACCESSION NR: AT5023090

UR/0000/65/000/000/0111/0117

AUTHOR: Vasil'yeva, Ye. V.; Prokoshkin, D. A.; Chuang, Hsiang-ling

TITLE: Microstructure and oxidation resistance of the alloys of niobium with tungsten, aluminum and titanium

SOURCE: Problemy bol'shoy metallurgii i fizicheskoy khimii novykh splavov (Problems of large-scale metallurgy and physical chemistry of new alloys); k 100-letiyu so dnya rozhdeniya akademika M. A. Pavlova. Moscow, Izd-vo Nauka, 1965, 111-117

TOPIC TAGS: high temperature oxidation, niobium base alloy, grain structure, solid solution, titanium containing alloy, crystal defect

ABSTRACT: Tungsten is an element that toughens niobium. In most cases, however, Nb-W alloys display insufficient resistance to oxidation; this can be remedied by alloying with Al and Ti. What is more, Ti also improves the plasticity and ease of treatment of Nb, which cannot be said of Al, since if the Al content exceeds 5-10% this leads to embrittlement of the base. In this connection, the authors investigated alloys of Nb with 5, 10, and 15 wt.% W and an Al content

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ACCESSION NR: AT5023090

of from 1 to 3.5%, with the object of determining the effect of W and Ti on the oxidation resistance of the binary Nb-W alloys at 1000, 1100, and 1200°C. The alloys were prepared from pure metals in a tungsten-electrode arc furnace with an argon atmosphere, and annealed (homogenized) at 1400-1600°C for 50-200 hr. The microstructure of the alloy ingots was dendritic, with uniform grain size. Since part of the specimens was charged in polished form into the furnace, annealing resulted in thermal etching which revealed certain features of the microstructure. Individual grains displayed characteristic striation which on some acquired the form of spirals following the tracks of the branches of former dendrites. There is not yet a unified theory accounting for the nature of such effects; many factors are involved: the atmosphere in which the thermal etching takes place, and particularly its content of "active" agents -- O_2 , H_2 , H_2O (vapors), H_2S , etc., and their partial pressure. In addition, test temperature, the nature of the metal investigated, crystallography of the specimen, and other characteristics also are of major significance. In its ultimate appearance, following re-polishing and etching with a reagent consisting of H_2SO_4 , HNO_3 , and H_2F_2 , the microstructure of all the alloys represented a monophasic solid solution. Oxidation resistance of the alloys was determined according to weight gain per time unit by means of periodic weighing following exposures of 1, 2, 3, 5, and 10 hr

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to temperatures of 1000, 1100, and 1200°C in a silit furnace with an air atmosphere. Findings: as W content is increased from 5 to 10 wt.%, the oxidation rate decreases (from 19.2 mg/cm²-hr to 10.5 mg/cm²-hr). In alloys with 15 wt.% W the pattern is somewhat different: at 1000°C the oxidation rate increases, while at 1100 and 1200°C it decreases. Alloying with 5 wt.% Ti produces a very marked decrease in oxidation rate. Thus, the oxidation rate of Ti-containing alloy at 1000°C is 5.6 mg/cm²-hr and at 1100°C, 6 mg/cm²-hr. The scale from specimens oxidized at 1200° was pulverized and subjected to a X-ray analysis. At oxidation temperature of 1200°C niobium oxide was thus found to consist of β -Nb₂O₅ with a monoclinic lattice and parameters: a = 20.39 Å; b = 3.82 Å; c = 19.44 Å; α = 115°89'. Roentgenograms of all the alloys clearly displayed β -Nb₂O₅ lines: there were no other lines. Apparently, the scale represents a solid solution on β -Nb₂O₅ base, containing oxides of the alloy elements. The ion radius of W is shorter than that of Nb (0.62 vs. 0.66 Å). Apparently, the dissolution of W in Nb₂O₅ results in a decrease in volume of the scale owing to substitution, i.e. the volume ratio of the oxide to the metal decreases; this results in a more compactly adhering oxide film with enhanced protective properties. Moreover, according to Wagner's theory, the addition of an alloy element with a higher valence than

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that of the base should cause an increase in the number of free electrons and a decrease in the number of lattice defects. This leads to an increase in electron conduction and decrease in ion conduction, i.e. in diffusion rate. The valence of W (6+) exceeds the valence of Nb (5+). Accordingly, W is bound to augment the oxidation resistance of Nb. The presence of Ti causes the formation of the solid solution TiO_2 in the Nb_2O_5 of the scale. Apparently, the dissolution of Ti makes the scale's lattice less favorable to the diffusion of oxygen ions than the lattice $\beta-Nb_2O_5$. Orig. art. has: 3 figures, 3 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: HM, SS

NO REF SOV: 007

OTHER: 005

Card

4/4

L 2660-66 EWT(m)/EPF(c)/T/EWP(t)/ENP(b)/ENA(c) IJP(c) JD/HW/JG/WB/GS

ACCESSION NR: AT5023091

UR/0000/65/000/000/0118/0124

AUTHOR: Prokoshkin, D. A.; Vasil'yeva, Ya. V.; Ryabyshev, A. M.

TITLE: Oxidation of the alloys of niobium with tungsten

SOURCE: Problemy bol'shoy metallurgii i fizicheskoy khimii novykh splavov
(Problems of large-scale metallurgy and physical chemistry of new alloys);
k 100-letiyu so dnya rozhdeniya akademika M. A. Pavlova. Moscow, Izd-vo Nauka,
1965, 118-124

TOPIC TAGS: niobium alloy, tungsten containing alloy, high temperature oxida-
tion, oxidation kinetics, gas diffusion, metal scaling

ABSTRACT: Alloys of Nb with W are of major interest, since W markedly enhances the high-temperature strength of Nb. But while the data on the high-temperature strength of Nb-W alloys unambiguously point to the favorable effect of W, the data on another important characteristic -- the effect of W on the oxidation resistance of Nb -- are extremely contradictory. In an effort to clarify this point, the authors investigated the oxidation kinetics of Nb-W alloys containing 0.5 to 40 wt.% W, at temperatures of 1000, 1100, and 1200°C, by heating alloy

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specimens in the air for 1, 2, 5, and 10 hr, while at the same time continually weighing them. It was found that the time-dependence of the weight gain due to oxidation obeys a parabolic law in the initial stage (Fig. 2). During this stage the oxidation rate is determined by the rate of O_2 diffusion through the oxide film forming on the alloy's surface. The thickness of the oxide layer increases in accordance with the parabolic law until, owing to the great difference in the unit volumes of the metal and oxide, there arise considerable stresses which lead to the cracking of the oxide and its peeling from the metal, whereupon the time-dependence of weight gain begins to obey a linear law. Noteworthy is the anomalous course of the temperature dependence of the oxidation rate: thus, at $1000^\circ C$ this rate is higher than at $1100^\circ C$. At $1200^\circ C$ the oxidation rate increases somewhat and approaches the values obtained at $1000^\circ C$. X-ray analysis established that under these conditions the oxidation rate of the alloys is chiefly determined by the structure of the scale, and in particular by the formation of the solid solution $(Nb, W)_2O_5$. Thus, the reason for the decrease in the oxidation rate of the alloys is that the diffusion of oxygen across the scale's lattice leads to a decrease in the oxide-to-metal volume ratio, hence resulting in a decrease in the peeling of the oxide film off the metal. Hence, by the same token, the observed

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character of the temperature dependence of oxidation rate cannot be attributed to the retardation of the diffusion of oxygen through the scale. Orig. art. has: 4 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 01

SU3 CODE: MM, 15

NO REF SOV: 005

OTHER: 009

Card 3/4

L 2660-66

ACCESSION NR: AT5023091

ENCLOSURE: 01

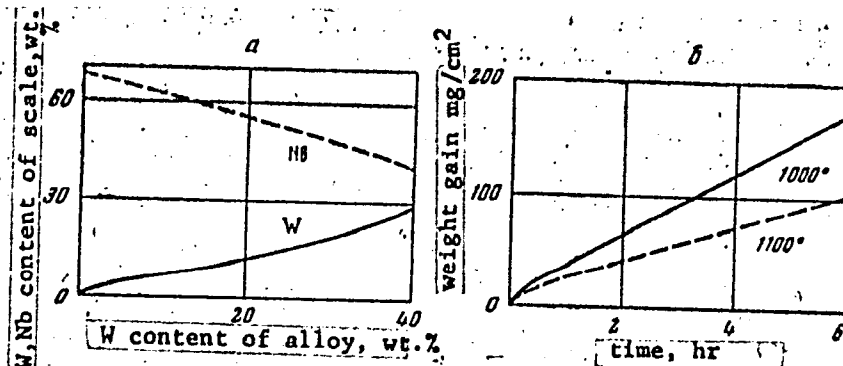


Fig. 2. Scale composition as a function of the W content of alloy (a) and of weight gain with time, Nb + 15% W at 1000-1100°C (b)

Card

L 2659-66 EWP(e)/EWT(m)/EWP(w)/EPF(c)/EWP(i)/T/EWP(t)/EWP(b)/EWA(c) IJP(c)

JD/JG/WB/GS

ACCESSION NR: AT5023092

UR/0000/65/000/000/0125/0129

AUTHOR: Vasil'yeva, Ye. V.; Prokoshkin, D. A.; Belova, L. M.

TITLE: Certain properties of the alloys of niobium with boron

SOURCE: Problemy bol'shoy metallurgii i fizicheskoy khimii novykh splavov
(Problems of large-scale metallurgy and physical chemistry of new alloys);
k 100-letiyu so dnya rozhdeniya akademika M. A. Pavlova, Moscow, Izd-vo Nauka,
1965, 125-129

TOPIC TAGS: niobium base alloy, boron containing alloy, alloy phase diagram,
high temperature oxidation, X ray analysis

ABSTRACT: The properties of alloys based on the Nb-B system are virtually un-
known although the constitution diagram of the binary Nb-B system is known
(H. Novotny, F. Benezovsky, R. Kieffer, Zts. Metallkunde, 50, 7, 417, 1959);
this diagram provides no definite information on the solubility of B in Nb and
vice versa, since the solubility lines in both cases are plotted in broken-line
form. It is also known that the oxidation rate of Nb at 600 and 800°C decreases
as a result of alloying with B. But no other data on the properties of Nb-B alloys

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ACCESSION NR: AT5023092

are available. To fill this gap, the authors investigated the properties of the alloys of Nb with 0.01, 0.05, 0.1, 0.5, 1, 3, and 5 wt.% (increasing the B content above 5 wt.% leads to a marked embrittlement of the alloys). The microstructure of homogenized specimens of the alloys was examined with the aid of an etching agent consisting of 1 part HNO_3 + 1 part HF. It was found that the phases over the grain boundaries, visible in the ingot structure of the alloys containing upward of 1% B became completely dissolved during homogenization annealing, with a marked polygonization. At 3% B the microstructure is characterized by a finer grain compared with the alloy containing 0.1% B. Boron markedly reduces the density of the alloys, despite its relatively small content. Reason: the extremely low density of B (2.34 g/cm^3) and boride compared with the density of niobium (8.57 g/cm^3). Oxidation resistance was determined by periodic weighing following exposure to air at 1000, 1100, and 1200°C for up to 20 hr. The oxidation products were subjected to X-ray analysis. At a B content of up to 1% the oxidation rate of Nb rises considerably ($\sim 130 \text{ mg/cm}^2$, whereas any further increase in the B content of the alloys leads to a decrease in this rate. According to X-ray findings, the structure of the scale of Nb with 1% B is a high-temperature modification of $\beta\text{-Nb}_2\text{O}_5$; hence, the sharp increase in oxidation rate

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cannot be attributed to any changes in the scale structure and apparently is due to its microstructural features, particularly the large amount of second phase. The decrease in oxidation rate when the B content is raised above 1% is to some extent associated with the change in the structure of the alloys. Alloying with even small quantities of B (0.01 and 0.05%) causes a sharp increase in the hardness of Nb at room temperature but produces no effect at 1000°C -- unless the boron content is raised to 2% and higher. The higher the B content is, the lower is the rate of creep of the alloy. Orig. art. has: 4 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM.

NO REF SOV: 002

OTHER: 002

Card 3/3

L 10388-65

English Edition

SOURCE: AN SSSR, Institut metallurgii, Issledovaniya metallov i
zhidkomykh sredstv peredovoi tekhnologii, Moscow, 1985, p. 1, 10.
All states are in the Russian Federation.

1985, 1986, tungsten-niobium alloy, tungsten oxidation, tungsten
niobium alloy oxidation, tungsten alloy oxidation kinetics

ABSTRACT: Experiments have been conducted to determine the kinetics
of oxidation of binary tungsten-niobium alloys containing from 1 to
50% Nb. Alloys were melted from 1000 to 1300°C, tungsten and niobium
in an arc furnace, and the rate of oxidation was measured at
1000, 1100, 1200, and 1300°C. Oxidation tests were per-
formed in air at 900, 1000, 1100, 1200, and 1300°C for 5-6 hr. It
was found that at temperatures below 1300°C the oxidation rate deviates
from the parabolic and becomes more linear; the higher the test tem-
perature. However, at 1300°C the oxidation of alloys with 15, 20, and

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L 10388-65

ACCESSION NR: AT4045998

30% Nb alloys, the para... of unalloyed tungsten. The alloy with 30% Nb was found to be the most resistant to oxidation. Its weight gain in air amounted to 14.5 mg/cm² at 1300°C, 19.4 mg/cm² at 1350°C, 22.5 mg/cm² at 1400°C, and 25.5 mg/cm² at 1450°C. Alloys with 40 and 50% Nb are less oxidation resistant than alloys with 30% Nb. The oxide layer of alloys with 1-30% Nb has a laminated structure; the oxide layer of alloys with 40, 50, and 60% Nb consists of fine lamellas. The alloy with 30% Nb has the thinnest oxide layer. The oxide layers on all alloys tested adhere more tightly to the metal than in the case of unalloyed tungsten; nevertheless, they can be removed easily. The tungsten content in the oxide layer gradually decreases and that of niobium increases with increasing temperature. The oxidation temperature affects the thickness of the oxide layer, but affects its structure only slightly.

SUBMITTED: 18May64

ATD PRESS: 3116

ENCL: 00

SUP CODE: MM. 00

L 1397E-65 BWT(m)/BWT(n)-2/T-BWT(1)/BWT(2)/BWT(3) BWT(4) BWT(5)-2 (ASW m)-2
37/00/MLK

ACCESSION NR: AT4045999

8/0000/64/000/000/0248/0254

AUTHOR: Vasil'yeva, Ye. V.; Prokoshkin, D. A.

TITLE: Properties of ternary niobium-tantalum-molybdenum alloys

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya metallov v zhidkom i tverdom sostoyaniyakh (Research of metals in liquid and solid states). Moscow, Izd-vo Nauka, 1964, 248-254

TOPIC TAGS: niobium, niobium alloy, alloy property, tantalum containing alloy, molybdenum containing alloy

ABSTRACT: Ten Nb-Mo-Ta alloys containing 10% Mo and 0.25—15 wt% Ta were investigated. The alloy specimens were melted in an arc furnace in argon and annealed at 2000C for 10 hr (also in an argon atmosphere). Microscopic examination showed that all the alloys had a one-phase structure of a solid solution. The specific gravity of the alloys varied, depending on the composition, from 8.748 to 9.400 g/cm³, increasing with tantalum content. The oxidation tests conducted at 1000, 1100, and 1200C for a total of 21 hr showed that the oxidation at the beginning followed a parabolic rate which later became linear.

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11978-65

ACCESSION NR: AT4045999

The addition of tantalum (up to 4%) to Nb-Mo alloy decreased somewhat the oxidation rate at all three temperatures tested. For instance, after 21 hr at 1000, 1100, and 1200C, an alloy with 0.5% Ta gained 151.3, 174.0, and 260.0 mg/cm², respectively; and an alloy with 4% Ta gained 119.7, 137.1, and 243.0 mg/cm², respectively. At 5% Ta the oxidation rate began to increase, remaining, however, below that of unalloyed niobium. X-ray diffraction patterns showed that the oxide layer on all the alloys tested was a solid solution of tantalum and molybdenum oxides in β -Nb₂O₅. The hardness of alloys at room and high temperatures and the creep strength at 1000C increased with increasing tantalum content. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 18May64

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 004

ATD PRESS: 3137

Card 2/2

PROKOSHKIN, D.A.; VASIL'YEVA, Ye.V.; RYABYSHEV, A.M.

Investigating the kinetics and the mechanism of the oxidation of
niobium-molybdenum alloys. Issl. po zharoproch. splav. 10:233-239
'63. (MIRA 17:2)

PROKOSHKIN, D.A.; VASIL'YEVA, Ye.V.; POPOV, N.N.

Properties of alloys of the system niobium - tungsten - titanium.
Issl. po zharoproch. splav. 10:219-225 '63. (MIRA 17:2)

PROKOSHIN, Dmitriy Antonovich; VASIL'YEVA, Yelena Valentinovna;
SAMARIN, A.M., otv. red.

[Niobium alloys] Splavy niobia. Moskva, Izd-vo "Nauka,"
1964. 330 p. (MIRA 17:4)

1. Chlen-korrespondent AN SSSR (for Samarin).

ACCESSION NR: AT4015958

S/2659/63/010/000/0233/0239

AUTHOR: Prokoshkin, D. A.; Vasil'yeva, Ye. V.; Ryabyshov, A. M.

TITLE: A study of the kinetics and mechanism of oxidation of Nb-Mo alloys

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 10, 1963, 233-239

TOPIC TAGS: niobium alloy, molybdenum containing alloy, refractory alloy, alloy oxidation, alloy oxidation rate, alloy scale property, molybdenum trioxide

ABSTRACT: The authors considered the effects of various additions of Mo (0.5-50% by weight) on the rate of oxidation of Nb in free air at temperatures of 1000-1200C. Kinetics of high-temperature oxidation of Nb-Mo alloys were studied by continuous weighing. Finally, scale on the alloy was subjected to X-ray analysis. Test specimens were smelted in a vacuum arc furnace (non-consumable tungsten electrode, purified argon atmosphere, 200 to 300 mm Hg) and resmelted several times to insure better fusion and uniform composition. Refractory characteristics were determined from weight increase after 1, 2, 3, 5 and 10 hours in free air at 1000, 1100 and 1200C. Rate of oxidation of Nb at these temperatures shows a decrease when Mo is alloyed (up to 10% by weight) with it (see

Card 1/12

ACCESSION NR: AT4013958

Figs. 1 and 2 in the Enclosure). Minimum rates of oxidation tend towards higher concentrations of Mo as temperature is increased. Deterioration of heat resistance characteristics at high concentrations of Mo is caused by formation of the volatile MoO_3 . Oxidation exhibits a parabolic pattern during its initial stages, then becomes linear. X-ray analysis has shown the presence of a solid solution $(\text{Nb}, \text{Mo})_2\text{O}_5$, whose lattice parameters decrease as the content of Mo increases. The scale of alloys with more than 5% by weight of Mo exhibits a monoclinic lattice, analogous to that of $\beta\text{-Nb}_2\text{O}_5$, but differing from it in its fine structure. MoO_3 disappears from the scale at 1000-1200C. Orig. art. has: 4 graphs, 1 table.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy)

SUBMITTED: 00

DATE ACQ: 27Feb64

ENCL: 02

SUB CODE: ML

NO REF SOV: 004

OTHER: 009

Cord 2/42

PROKOSHKIN, D.A.; VASIL'YEVA, Ye.V.

Oxidation of certain niobium-base binary alloys. Issl. po zharopr.
splay. 9:164-171 '62. (MIRA 16:6)
(Niobium alloys) (Oxidation)

PROKOSHKIN, D. A.; VASIL'YEVA, Ye. V.

Connection between hardness and mechanical properties of
metals and alloys. Trudy Inst. met. no.13:131-142 '63.
(MIRA 16:4)

(Metals--Testing) (Hardness)

PROKOSHIN, D. A.; VASIL'YEVA, Ye. V.; Prinimala uchastiye AGIBALOVA, L. M.

Kinetics and the mechanism of niobium oxidation. Trudy Inst.
met. no. 13:143-151 '63. (MIRA 16:4)

(Niobium—Metallography)
(Oxidation)

PROKOSHKIN, D.A.(Moskva); VASIL'YEVA, Ye.V.(Moskva)

Process and products of the oxidation of niobium-titanium alloys.

Izv. AN SSSR.Otd.tekh.nauk. Met. i topl. no.5:151-156 S-0'62.

(MIRA 15:10)

(Niobium-titanium alloys--Metallography)
(Oxidation)

VASIL'YEVA, Ye.V.; NEDOPEKIN, T.K.; PETRUN'KIN, V.Ye.

Complex-forming capacity of mercapto compounds. Part 1: Comparative evaluation of the strength of complex compounds of dithiols with mercury, lead, cadmium, and zinc cations. Ukr.khim.zhur. 28 no.7:773-778 '62.
(MIRA 15:12)

1. Unrainskiy nauchno-issledovatel'skiy sanitarno-khimicheskiy institut.
(Organometallic compounds) (Dithiol)

VASIL'YEVA, Ye. V.

Investigating the effect of heat treatment and tensile strain
at high temperatures on the microstructure of chromium-base
alloys. Trudy Inst. met. no.13:122-130 '63. (MIRA 16:4)

(Chromium alloys—Metallography)
(Metals, Effect of temperature on)

PROKOSHKIN, D. A.; VASIL'YEVA, Ye. V.; ~~Prinimali uchastiye:~~ VERGASOVA,
L. L.; RYABYSHEV, A. M.

Investigating the oxidation of niobium-vanadium alloys. Trudy
Inst. met. no.13:152-156 '63. (MIRA 16:4)

(Niobium-vanadium alloys—Metallography)
(Oxidation)

PROKOSHKIN, D. A.; VASIL'YEVA, Ye. V.; RYABYSHEV, A. M.

Investigating the oxidation of niobium-titanium-zirconium
alloys. Trudy Inst. met. no.13:157-162 '63. (MIRA 16:4)

(Niobium-titanium-zirconium alloys—Metallography)
(Oxidation)

PROKOSHKIN, D.A. (Moskva); VASIL'YEVA, Ye.V. (Moskva); YANUSHKEVICH, V.Ye.
(Moskva)

Investigating the oxidation of niobium-zirconium alloys. Izv. AN SSSR.
Otd. tekhn. nauk. Met. i gor. delo no.1:186-190 Ja-F '63. (MIHA 16:3)
(Niobium-zirconium alloys—Testing) (Oxidation)

VASIL'YEVA, Yelena Vladimirovna; LISETSKAYA, A.P., red.; PONOMAREVA,
A.A., tekhn. red.

[Development of the food industry and the economics of public
labor in the U.S.S.R.] Razvitie pishchevoi promyshlennosti i
ekonomiia obshchestvennogo truda v SSSR. Moskva, Ekonomizdat,
1962. 194 p. (MIRA 15:10)

(Food industry)
(Labor and laboring classes)

VASIL'YEVA, Ye.V.; ZAGORSKIY, G., red.; PAVLOVA, S., tokhn. red.

[The most valuable achievements of efficient corn growers]
Samoё tsennoe v opyte peredovykh kukuruzovodov. Moskva,
Mosk. rabochii, 1961. 47 p. (MIRA 15:10)
(Corn (Maize))

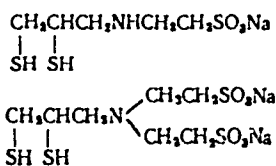
S/073/62/028/007/001/004
E075/E436

AUTHORS: Vasil'yeva, Ye.V., Nedopekin, T.K., Petrun'kin, V.Ye.

TITLE: Investigation of the complex-forming capacity of mercapto-compounds. Part I. Comparative evaluation of the strength of complex compounds of dithiols with the cations of mercury, lead, cadmium and zinc

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v.28, no.7, 1962, 773-778

TEXT: The method of investigation was to decompose a dithizone complex of a metal with an aqueous dithiol. The extent of the decomposition was taken as a measure of the strength of the dithiol-metal complex. Thiols forming a stable complex with one of the metals form also stable complexes with the other metals. The most stable complexes (95% of dithizone complex decomposed) were formed by

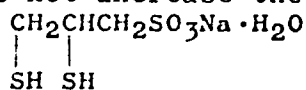


Card 1/3

Investigation of the complex- ...

S/073/62/028/007/001/004
E075/E436

In general, the most stable complexes are formed by sodium dimercaptoalkylsulphonates containing sulfo-sulphur or amine-nitrogen. The least stable compounds are formed by dimercaptoderivatives of malonic acid, aromatic thiols and heterocyclic thiols containing two non-aligned SH groups and monothiols. Transfer of SH in thiols of the fatty series from 2,3 to 1,3 position does not increase the strength of the complexes. Soviet produced thiol



forms complexes with

Zn and Hg having similar stability to those formed by non-Soviet product BAL (2,3 dimercaptopropanol). The latter decomposes 75% of the dithizone complex. Many of the thiols form much stronger complexes with Hg than ethylenediaminetetraacetic acid. With Pb, Zn and Cd the acid gives complexes having similar stability to those formed by the best thiols. The dithizone method of determining complex stability is recommended for general usage. There are 4 tables.

Card 2/3

Investigation of the complex- ...

S/073/62/028/007/001/004
E075/E436

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy sanitarno-
khimicheskiy institut (Ukrainian Scientific Research
Sanitary Chemistry Institute)

SUBMITTED: May 18, 1961

Card 3/3

SYSUYEV, Yu.A.; VASIL'YEVA, Ye.V.; KRASIL'NIKOVA, M.A.

Effect of plastic deformation on phase transformations in silicon
and nickel steels. *Izv.vys.ucheb.zav.*; fiz. no.3:218-222 '60.
(MIRA 13:7)

1. Fiziko-tekhnicheskii institut pri Gor'kovskom gosuniversitete
imeni N.I.Lobachevskogo.
(Steel alloys--Metallography)

82341

18.7500

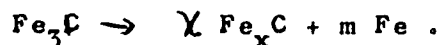
S/139/60/000/03/038/045

AUTHORS: Sysuyev, Yu.A., Vasil'yeva, Ye.V. and
Krasil'nikova, M.A.

TITLE: Influence of Plastic Deformation on Phase Transformations
in Silicon and Nickel Steels

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,
1960, No 3, pp 218 - 222 (USSR)

ABSTRACT: In earlier work of one of the authors and his team
(Refs 1-3) it was shown that in simple carbon steels
the cementite decomposes during plastic deformation
and a metastable carbide $\chi\text{Fe}_x\text{C}$ forms on the basis of
the reaction:



It is obvious that in steel in which a new phase forms
the change in the mechanical properties as a function
of the degree of deformation differs from that of steel
where there is no such transformation. In this paper,
the authors attempt to elucidate the influence of plastic
deformation on the changes in the cementite of steels

Card1/3

4

82341

S/159/60/000/03/038/045

E073/E335

Influence of Plastic Deformation on Phase Transformations in Silicon and Nickel Steels

alloyed with Si and Ni. The specimens studied were Ni and Si steels quenched from 1 150 °C and tempered for two hours at 600 °C (silicon steel) and 650 °C (nickel steel), respectively. The chemical analyses of the seven steels used in the experiments are given in a table, p 218. The phase transformations under the effect of plastic deformation were studied by means of a magnetic method. It was found that during plastic deformation steels alloyed with Si and Ni with an initial structure consisting of $\alpha + \text{Fe}_3\text{C}$ phase transformations may take place. As a result of the deformation, the cementite becomes transformed into an intermediate carbide XFe_xC (the Curie point being 260-265 °C), which becomes unstable on heating above 400 °C and ceases to exist at 600 °C. Comparison of the processes of graphitisation on the example of a Si steel after deformation and quenching confirms the conclusion that there is

Card 2/3

82341

S/139/60/000/03/038/045

E073/E335

Influence of Plastic Deformation on Phase Transformations in
Silicon and Nickel Steels

a reduction in the speed of graphitisation in steel which has
been deformed from all sides by non-uniform compression.
There are 7 figures, 1 table and 6 references, all Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut pri Gor'kovskom
gosuniversitete imeni N.I. Lobachevskogo (Physico-
Technical Institute of Gor'kiy State University
imeni N.I. Lobachevskiy)

SUBMITTED: July 20, 1959

Card 3/3

NESTEROV, G.S.; YASIL'YEV, Yu.A.

Investigating the effect of technological parameters on the indices of the copper ore flotation process. Izv. vuz. tsvet. zav.; tsvet. met. 7 no.6:131-135 '64.

(MIRA 18:3)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut obogashcheniya i mekhanicheskoy obrabotki poleznykh iskopayemykh.

PERTKOVSKIY, A.I., V. VILKINA, (U.S.).

Level of 17-hydroxycorticosteroids in the blood and their excretion
in the urine in patients with minor forms of pulmonary tuberculosis.
Probl. tub. 41 no.11:53-60 1961. (U.S.S.R.)

1. Iz Instituta meditsinskoj klimatologii i klimatoterapii imeni
Sechenova (dir. B.V. Bogutskiy), Yalta.

VASIL'YEVA, Yu.S., kand.med.nauk

Determination of thyroid function in tuberculosis of the lungs
by the basal metabolism method and radioactive indication.
Probl. tub. 41 no.6:72-75 '63. (MIRA 17:2)

1. Iz kliniki legochnogo tuberkuleza (zav. V.K.Dargevich)
Nauchno-issledovatel'skogo instituta meditsinskoy klimatologii
i klimatoterapii imeni Sechenova (dir. B.V.Bogutskiy), Yalta.

VASIL'YEVA, Z.A. (Barsukova)

Effect of a sharp increase of positive and inhibitory conditioned stimuli on the higher nervous activity in dogs. Zhur. vys. nerv. deiat. 11 no.6:1032-1037 N-D '61.

(MIRA 15:3)

1. Pavlov Physiological Department, Institute of Experimental Medicine, U.S.S.R. Academy of Medical Sciences, Leningrad.
(CONDITIONED RESPONSE).

VAYNSHTEYN, B.P.; KRUGLIKOV, V.Ya.; RAPOPORT, I.B.; VASIL'YEVA, Z.A.;
KAGAN, L.Kh.; PLOKHINSKAYA, Ye.A.; VOLYNSKIY, A.V.; MIZOVSKIY,
V.V.; KLEVTSOVA, V.P.; Primalni uchastiye: MICHAN, A.I.;
KONOVAL'CHIKOV, L.D.; AYNShTEYN, V.G.; KVASHA, V.B.; CHELYANOVA,
D.P.; ZAYTSEVA, A.F.; ANDREYEVA, T.A.

New way to synthesize oxygen compounds from carbon monoxide
and hydrogen over iron-copper catalysts. Trudy VNII NP no.
9:177-196 '63. (MIRA 17:6)

ROMAZANOVICH, N.P.; VASIL'YEVA, Z.A.

Production of esters of *p*-aroxypropionic acids. Ukr. khim. zhur.
27 no.4:548-549 '61. (MIRA 14:7)
(Propionic acid)

VASIL'YEVICH, D.P. [Vasileviene, D.P.]; GIRDZIYAUSKAS, V.I. [Girdzienskis, V.I.]

Use of a selection method in the production of dermal smallpox
detritus. Vop.virus. 4 no.3:353-355 My-Je '59.

(MIRA 12:8)

1. Vil'nyusskiy institut epidemiologii i gigieny i meditsin-
skiy fakul'tet Vil'nyusskogo gosudarstvennogo universiteta
imeni V.Kapsukasa.

(SMALLPOX, immunol.

vaccine, selection of calves (Mus))

VASIL'YEVA, Yu.M., kand.med.nauk; PEREVODCHIKOVA, N.I., kand.med.nauk

Seventh International Cancer Congress in London. Vest. AMN SSSR

14 no.3:70-76 '59.

(MIRA 12:3)

(LONDON--CANCER--CONGRESSES)

VASIL'YEVA, Yu. S., Cand Med Sci -- (diss) "Course of the tubercular process in sick persons with altered function of the thyroid gland under sanatorium and climate treatment on the southern shore of the Crimea." Yalta, 1960. 16 pp; (Crimea State Medical Inst im I. V. Stalin); 200 copies; price not given; (KL, 29-60, 127)

KHASKIN, I.S.; VASIL'YEV, A.A.

production of α,β -trichloropropionitrile and α,α,β -trichloropropionic acid. Khim. prom. 41 no.8, 577-578 Ag '65.
(MIRA 18:9)

VASIL'YEVA, Z. A.

Kislovskii coal. N. M. Karavayev and Z. A. Vasil'eva.
Khim. Tverdogo Topliva 3, 29-37 (1962). Analysis and
carbonisation tests, results of which are given in detail,
show that this coal is satisfactory for the manuf. of coke.
A. A. Borhtlingk

BIRYUKOV, Dmitriy Andreyevich, prof., otv. red.; GOLIKOV, N.V. red.;
ZIMKIN, N.V., red.; KARAMYAN, A.I., red.; KUPALOV, P.S., red.;
LAPINA, I.A., red.; VASIL'YEVA, Z.A., red.; KHARASH, G.A., tekhn.
red.

[Problems of the physiology and pathology of higher nervous activity]
Problemy fizologii i patologii vysshei nervnoi deiatel'nosti.
Pod obshchei red. D.A.Biriukova. Leningrad, Medgiz. No.2. 1963.
192 p. (MIRA 16:12)

1. Akademiya meditsinskikh nauk SSSR, Moscow. 2. Deystvitel'nyy
chlen AMN SSSR (for Biryukov).
(NERVOUS SYSTEM)

KVASNIKOV, Ye.I. [Kvasnykov, IE.I.]; BERNSHTEYN, A.F.; VASIL'YEVA, Z.A.
[Vasyl'ieva, Z.A.]; SUKHOV, V.V.

Use of lactic acid bacteria for the biological preservation
of pulp. Mikrobiol. zhur. 25 no.6:54-58'63 (MIRA 17:7)

AYRAPET'YANTS, Ervand Shamirovich; GRACHEV, Iosif Ivanovich;
TULBAYEV, Peysen Tulbayevich; VASIL'YEVA, Z.A., red.
izd-va; KRUGLIKOVA, N.A., tekhn. red.

[New studies on the physiology of farm animals] Novye issledovaniia po fiziologii sel'skokhoziaistvennykh zhivotnykh. Moskva, Izd-vo AN SSSR, 1963. 94 p.

(MIRA 17:1)

(Conditioned response) (Veterinary physiology)

KONONOVA, Yelizaveta Pigasiyevna; VASIL'YEVA, Z.A., red.; SAFRONOVA,
I.M., tekhn. red.

[Frontal region of the cerebrum] Lobnaia oblast' bol'shogo
mozga. Leningrad, Medgiz, 1962. 175 p. (MIRA 16:5)
(BRAIN)

KHANANASHVILI, Mikhail Mikhaylovich; VASIL'YEVA, Z.A., red.;
BUCROVA, T.I., tekhn.red.

[Experimental study of the central mechanisms of the visual
function] Eksperimental'noe issledovanie tsentral'nykh
mekhanizmov zritel'noi funktsii. Leningrad, Medgiz, 1962.
179 p. (MIRA 15:5)
(BRAIN—LOCALIZATION OF FUNCTIONS)
(VISION)

ABULADZE, Kalenik Sardionovich; VASIL'YEVA, Z.A., red.; ZHUNAYEVA, Z.V.,
tekhn. red.

[The function of paired organs] K voprosu o funktsii parnykh organov.
Leningrad, Medgiz, 1961. 102 p. (MIRA 14:11)
(REFLEXES) (SYMMETRY (BIOLOGY))

KUPALOV, Petr Stepanovich, prof., otv.red.; GOLIKOV, N.V., red.; KASATKIN, N.I., red.; KARAMYAN, A.I., red.; LAPINA, I.A., red.; VASIL'YEVA, Z.A., red.; RULEVA, M.S., tekhn.red.

[Problems in the physiology and pathology of the higher nervous activity; successes and prospects for development] Problemy fiziologii i patologii vysshei nervnoi deiatel'nosti; dostizheniia i perspektivy razvitiia. Pod obshchei red. P.S.Kupalova. Leningrad, Gos.izd-vo med.lit-ry Medgiz, Leningr.otd., 1960. 238 p.

(MIRA 13:12)

1. Akademiya meditsinskikh nauk SSSR. Moscow. 2. Deystvitel'nyy chlen AMN SSSR (for Kupalov).

(NERVOUS SYSTEM)

<p>VASIL'YEVA Z. A.</p> <p>BC</p> <p>A-1</p>	
<p>Kinetics of dehydrogenation of decalin in presence of mixed catalysts. IV. V. I. KASHKOV and Z. A. VASIL'YEVA (J. Phys. Chem. Russ., 1938, 44, 670-677; cf. A., 1938, 712).—Three industrial catalysts were used between 250° and 500°. The temp. used was 1.5–1.4 sec. 10°. J. J. B.</p>	
<p>ASM-51A METALLURGICAL LITERATURE CLASSIFICATION</p>	
<p>18000 170 03100</p>	<p>18000 170 03100</p>
<p>18000 170 03100</p>	<p>18000 170 03100</p>

LO0908-66 EWA(j)/EWT(m)/EPF(c)/ENP(j)/EWA(b)-2 RPL WW/RM

ACCESSION NR: AP5019677

UR/0064/65/000/008/0577/0578
547.239.23'113.07+547.297.3.07

AUTHORS: Khaskin, I. G.; Vasil'yeva, Z. A.

TITLE: Production of α, α, β -trichloropropionitrile and α, α, β -trichloropropionic acid

SOURCE: Khimicheskaya promyshlennost', no. 8, 1965, 577-578

TOPIC TAGS: chlorination, chlorine organic compound, trichloropropionitrile, trichloropropionic acid

ABSTRACT: The conditions for the synthesis of the herbicides α, α, β -trichloropropionitrile (A), α, α, β -trichloropropionic acid (B), and the sodium salt of B were studied. The synthesis is based on the chlorination of acrylonitrile with chlorine gas in the presence of tertiary aliphatic amines, diacryloamines, or their salts at 40C. The yield of A was 90-98%. B is derived from A by reaction with 73% sulfuric acid at 120-130C; yield 95%. The sodium salt of B is obtained by neutralizing B with 40-50% sodium hydroxide. Orig. art. has: 2 equations.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: 0C

NO REF SOV: 001

OTHER: 023

Card 1/1 DP

DOMAN, N.G.; VASIL'YEVA, Z.A.; ROMANOVA, A.K.; ZAVARZIN, G.A.

Assimilation of carbon of monocarboxylic compounds by budding
bacteria *Hyphomicrobium vulgare* Stuts. et Hartleb. Mikrobi-
logiia 24 no.1:3-11 Ja-F '65. (MIRA 18:7)

1. Institut biokhimii AN SSSR imeni A.N. Bakha i Institut mikro-
biologii AN SSSR.

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859010014-2

Asil'yeva, Z. A.

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001859010014-2"

BORZUNOVA, Aleksandra Stepanovna; BIRYUKOV, Dmitriy Andreyevich;
VASYUKOV, Nikolay Mikhaylovich; VASIL'YEVA, Z.A., red.;
KHARASH, G.A., tekhn. red.

[Theoretical fundamentals of medical expertise on the
capacity for work] O teoreticheskikh osnovakh vrachebno-
trudovoi ekspertizy. Leningrad, Medgiz, 1963. 185 p.
(MIRA 17:1)

ZAL'TSMAN, Genrikh L'vovich; KREPS, Ye.M., red.; VASIL'YEVA, Z.A., red.; CHU-
NAYEVA, Z.V., tekhn. red.

[Physiological bases for human life under conditions of increased
atmospheric pressure] Fiziologicheskie osnovy prebyvaniya chelove-
ka v usloviakh povyshennogo davleniya gazovoi sredy. Pod red.
E.M.Krepsa. Leningrad, Gos. izd-vo med. lit-ry Medgiz, Leningr.
otd-nie, 1961. 185 p. (MIRA 14:7)

1. Chlen-korrespondent AN SSSR (for Kreps)
(ATMOSPHERIC PRESSURE—PHYSIOLOGICAL EFFECT)

VASIL'YEVA, Z.A. (Barsukova)

Interaction of extinctive and supraliminal inhibition. Biol.
eksp. biol. i med. 50 no.7:3-7 J1 '60. (MIRA 14:5)

1. Iz fiziologicheskogo otdela imeni I.P.Pavlova Instituta
eksperimental'noy meditsiny AMN SSSR, Leningrad. Predstavlena
deystvitel'nyy chlenom AMN SSSR P.S.Kupalovym.
(INHIBITION)

KOSTENETSKAYA, Nataliya Annetol'yevna; VASIL'YEV, M. I., ed.

[Conditioned reflex regulation of the cerebral cortex
tonus] Uslovnorefleksionnaya regulatsiya tonusa kory go-
lovnogo mozga. Leningrad, Medicina, 1965. 114 p.
(NBA 18:3)

VASIL'YEVA, Z.A.

Effect of changes in the intensity of the conditioned stimulus
on the retarded conditioned reflex. Zhur. vys. nerv. deiat. 16
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TOMASHOV, B.D., VEDENEYEVA, M.A., VASIL' YEVA, Z.I. 32-6-12/54
The Electro-Chemical Method for the Determination of Anticorrosive Strength in Welding Joints of Alloyed Steels.
(Elektrekhimicheskiy metod opredeleniya korroziionnoy stoykosti svaroynykh soyedineniy nizkolegirovannykh staley -Russian)
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Received 7/1957
Reviewed 8/1957

PERIODICAL

ABSTRACT

For the determination of the anticorrosive strenght of deeply alloyed steels in welding joints as well as in those parts which are untouched by welding the application of the electrochemical method is recommended. This method is based upon the ratio of the electrochemical potentials in various zones of the welded steel object. The welding joint in contact with electrolyte forms a multi-electrode macrogalvanic element, the electrodes of which are: basic metal, welding seams, zones of thermal effect and zones of maximum voltage concentrations. Nonuniformity of the voltage distribution etc. caused by chemical as well as structural differences are formed on the metal surface of microgalvanic pairs, which served as research objects. Such experiments could prove to be dangerous if the anode of the welding seam becomes ground metal. In this case the tendency of the welding seam to corrode may be increased automatically, which, however, is due to the time taken by the experiment. An early determination of anticorrosive strenght

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Moscow Inst. Steel.

32-6-12/54

The Electro-Chemical Method for the Determination of Anticorrosive Strength in Welding Joints of Alloyed Steels.

is described by the paper and the peculiarities are dealt with in detail.

(With 6 illustrations).

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Z.N. [translator]; ALEKSANDROV, L. [translator]; KLADO, T.N.
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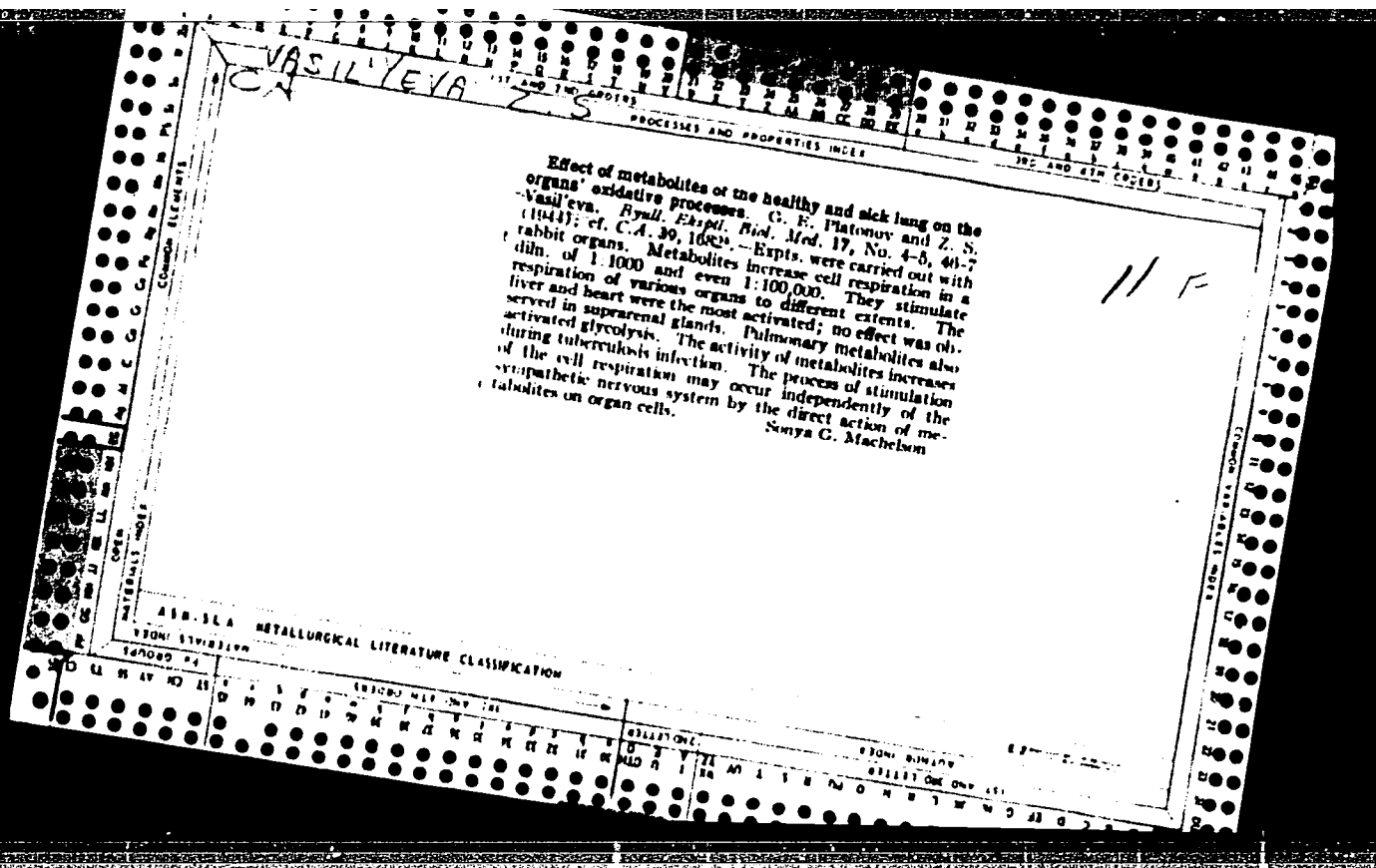
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10

Intensity of photosynthesis in aconite and kidney bean.
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tic activity (by detn. of CO_2 assimilation) in *Aconitum
flerovii* and *Phaseolus vulgaris* at 20-30° in flowering stage
with 20 min. exposures to light show that the kidney bean
has a much higher photosynthetic intensity, averaging
some 50% higher over several day periods with detns.
made in various periods of a day. G. M. Kiselev

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SS: SU1 186, 19 Aug 1954

USSR/Physiology of Plants. Photosynthesis.

I-2

Abs Jour: Ref. Zhur-Biologiya, No 1, 1958, 1127.

Author : Vasil'yeva, Z.V.

Inst : Main Botanical Garden of the Acad Sci USSR

Title : Photosynthesis in Several Sorts of Grape Under Moscow Oblast' Conditions.

Orig Pub: Byul. Gl. botan. sada A.N. SSSR, 1956, No 24, 51-58.

Abstract: The intensity of photosynthesis was determined over the course of the vegetation period by the halves method for four types of grape (amurskiy, Al'fa, Buytur, Korinka Michurina) of Moscow Oblast'. For the investigations samples of leaves of the middle stage were taken from bushes of three or four-year growth. The loss of organic substances from the leaves was calculated at the same time. During the day the maximum intensity of photosynthesis was seen to be: for Amurskiy and Al'fa sorts -- from 7:00 to 11:00 A.M. and for the Buytur and Korinka Michurina

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USSR/Physiology of Plants. Photosynthesis.

I-2

Abs Jour: Ref. Zhur-Biologiya, No 1, 1958, 1127.

sorts -- from 11:00 A.M. to 1:00 P.M. For all varieties the intensity of photosynthesis decreased toward the end of vegetation, and dropped sharply in late August. The early ripening varieties, Al'fa and Amurskiy, possessed in the first half of the vegetation period high intensity of photosynthesis in comparison with other types.

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